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CONFIDENTIAL

14 October 1958

MEMORANDUM FOR THE RECORD

SUBJECT:  Destructor System

25X1

1. On 8 October 1958  conducted tests at  Testing Grounds) to determine the reliability of the Tee connectors. In previous tests, 4 out of 45 connections failed, however, it was felt that the method of crimping the end cap on the branch line was at fault. In the following tests the crimp was always placed between the reference lip and the open end of the cap.

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2. Five main lines (each approximately 55 feet in length) were layed out on the ground and 20 branch lines were attached to each main line with the plastic Tee connectors. (One main line had 21 branches.) A  was placed on the end of each branch.

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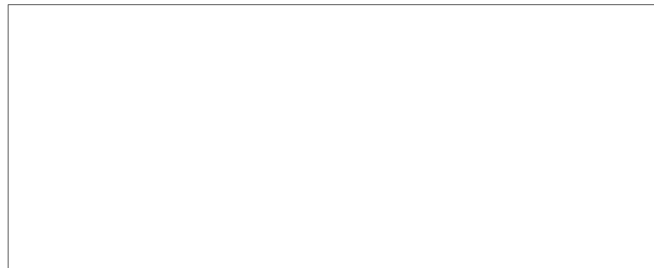
Results: One failure occurred and the end cap had the same flowered appearance as in the previous failures. Thus, 100 out of 101 were successful, however, it is felt that at least 50 more Tee connectors should be tested and not fail before this type of connections is considered reliable.

3. To determine what effect the  charge in the end caps has, 4 loaded and 5 empty end caps were crimped on dummy primacord branches.

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Photo 1 shows loaded end caps. The base on the one cap was not shattered, but the other three had a flowered appearance.

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Photo 2 shows the empty caps and it can be seen that they were only crushed. This indicates that the detonation of the PETN charge is responsible for the flowered appearance of the failures. The question now is to determine why the branches are not propagating when the PETN in the end cap detonates. One cause could be that enough PETN falls out of the primacord when it is cut that an air gap is left.



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4. Ten end caps were picked at random and weighed to determine the uniformity of the 1/8" PETN base charge. The results were:

1. 1.57 grams
2. 1.57 grams
3. 1.57 grams
4. 1.57 grams
5. 1.56 grams
6. 1.56 grams
7. 1.56 grams
8. 1.61 grams
9. 1.61 grams
10. 1.56 grams

5. Additional reliability tests will be tried in the near future.



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